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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,031	07/21/2005	Thanasis Loupas	US030029 US	8976
28159 7590 03/12/2009 PHILIPS MEDICAL SYSTEMS PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3003 22100 BOTHELL EVERETT HIGHWAY BOTHELL, WA 98041-3003				
EXAMINER				
CWERN, JONATHAN				
ART UNIT		PAPER NUMBER		
3737				
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03/12/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/543,031

**Applicant(s)**

LOUPAS, THANASIS

**Examiner**

Jonathan G. Cwern

**Art Unit**

3737

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1-14 are objected to because of the following informalities:

In claim 1, "the motion data of the pixels" lacks antecedent basis.

In claim 6, "the motion data" lacks antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Goujon (US 5941826).

Goujon shows a method for displaying the distribution of a motion characteristic occurring at a region of interest in a two or three dimensional ultrasound image of the body comprising (column 4, lines 5-15): acquiring a sequence of spatially dimensioned ultrasound images in which a motion characteristic is displayed (column 6, lines 10-60); delineating a region of interest (ROI) in one of the images where motion is present in the image (column 7, lines 30-40); processing the motion data from image points of the delineated ROI to determine the distribution of a motion characteristic as a function of

time (column 6, lines 10-60); and displaying the distribution of the motion characteristic as a function of time (column 6, lines 10-60); displaying a spectrogram (the histogram is called a Doppler spectrum, column 6, lines 10-60). Also, the images are color images and can be stored in a buffer (the memory is a buffer, column 6, lines 10-60); displaying an image of the ROI where the spectrogram is concurrently displayed (column 13, lines 35-55, and Figure 8); wherein the motion comprises blood flow velocity (distribution of speed and blood flow rate, column 4, lines 5-15); wherein the motion comprises tissue motion velocity (displacement of vessel walls, column 4, lines 5-15); wherein the motion comprises blood flow velocity derivatives (the amount of blood present is calculated over a change in time, this can be interpreted to be calculating blood flow velocity derivatives, the change in the amount of blood in a particular segment of the vessel over the change in time, column 6, lines 10-60); delineating a plurality of pixels in the images (user selects a vessel of interest to be segmented (delineated), the vessel will comprises a plurality of pixels, column 7, lines 25-40).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goujon (US 5941826) in view of Mo et al. (US 6142943).

Goujon shows a method for displaying the distribution of a motion characteristic occurring at a region of interest in a two or three dimensional ultrasound image of the body comprising (column 4, lines 5-15): acquiring a sequence of spatially dimensioned ultrasound images in which a motion characteristic is displayed (column 6, lines 10-60); delineating a region of interest (ROI) in one of the images where motion is present in the image (column 7, lines 30-40); processing the motion data from image points of the delineated ROI to determine the distribution of a motion characteristic as a function of time (column 6, lines 10-60); and displaying the distribution of the motion characteristic as a function of time (column 6, lines 10-60); displaying a spectrogram (the histogram is called a Doppler spectrum, column 6, lines 10-60). Also, the images are color images and can be stored in a buffer (the memory is a buffer, column 6, lines 10-60); displaying an image of the ROI where the spectrogram is concurrently displayed (column 13, lines 35-55, and Figure 8); wherein the motion comprises blood flow velocity (distribution of speed and blood flow rate, column 4, lines 5-15); wherein the motion comprises tissue motion velocity (displacement of vessel walls, column 4, lines 5-15); wherein the motion comprises blood flow velocity derivatives (the amount of blood present is calculated over a change in time, this can be interpreted to be calculating blood flow velocity derivatives, the change in the amount of blood in a particular segment of the vessel over the change in time, column 6, lines 10-60); delineating a plurality of pixels in the images

(user selects a vessel of interest to be segmented (delineated), the vessel will comprises a plurality of pixels, column 7, lines 25-40).

Goujon fails to specifically mention the use of a beamformer coupled to the ultrasound probe.

Mo teaches a beamformer connected to the probe (column 3, lines 30-45, and Figure 1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have had a beamformer connected to the ultrasound probe as taught by Mo, in the device of Goujon, with the motivation that a beamformer is a common element found in an ultrasound system to receive the return signals. There is a reasonable expectation of success to combine these references because both are related to ultrasound Doppler measurement of blood flow.

### ***Response to Arguments***

Applicant's arguments filed 12/12/07 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., data from different locations) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In regards to applicant's arguments that Goujon do not show processing motion data, examiner respectfully disagrees. Goujon first selects the desired blood vessel (delineated ROI) to be measured, and then calculates the velocity of the blood moving through the vessel. This refers to the motion of the blood over time.

In regards to applicant's arguments regarding the Mo et al. reference, it should be noted that Mo is relied on in the rejection to teach a beamformer.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Cwern whose telephone number is (571)270-1560. The examiner can normally be reached on Monday through Friday 9:30AM - 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan G Cwern/  
Examiner, Art Unit 3737

/BRIAN CASLER/  
Supervisory Patent Examiner, Art  
Unit 3737